

REMARKS

Herein, the “Action” or “Office Action” refers to the Office Action dated June 14, 2004.

Applicant respectfully requests reconsideration and allowance of all of the claims of the present application. Claims 1-21, 26-32 and 34-35 are presently pending. Claims 1, 10, 15, 26, 32, and 35 are amended. No new claims are added. Claim 33 is cancelled.

Rejections under 35 U.S.C. § 112

Claims 32 and 34-35 stand rejected under 35 U.S.C. § 112, second paragraph, as being “incomplete for omitting essential cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections.” Specifically, the Office Action argues that these claims omit the functional/structural/connectional interrelationships of element “differential signal conductors” with other elements (e.g., “transmitter package”, “receiver package”, “plurality of conductors”) in order to make a system associated with the claimed method as a complete operative and connective system. Applicant has amended claims 32 and 35 and respectfully requests that the Office withdraw the § 112 rejections.

Rejections under 35 U.S.C. § 103

Claims 1-21, 26-32 and 34-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over prior art admitted by the applicant in the specification in the instant application in view of U.S. Patent No. 5,282,754 to Kish et al.

1 (hereinafter “Kish”). Applicant traverses these rejections and asks that they be
2 withdrawn and the case passed along to issuance.

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4 **Claims 1-9**

5 As amended, **claim 1** recites an apparatus comprising [amendatory
6 language appears in bold italics]:

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- a first device;
 - a first connector coupled to the first device;
 - a second connector coupled to the first connector through a first plurality of conductors, wherein alternating pairs of conductors are reversed such that at least one pair of conductors is reversed at a **crossover** position **located substantially** closer to the first connector than the second connector; and
 - a second device coupled to the second connector through a second plurality of conductors.

13 In making out the rejection of claim 1, the Office Action states that Kish’s
14 crossover position must be at the mid-point between conductor pairs. Applicant
15 agrees. The Office Action then argues that “there are inherently plural of points
16 among plural of continuous points positioned from positions (30, 32) of a first
17 connector (10) to positions (52, 54) of a second connector (50) wherein said plural
18 of points are at positions closer to the first connector than the second connector.”
19 Applicant amends the language of claim 1 in order to clarify that the **crossover**
20 position is **located substantially** closer to the first connector than the second
21 connector. Accordingly, for at least this reason, claim 1 is allowable.

22 **Claims 2-9** depend from claim 1 and, as such, are allowable as depending
23 from an allowable base claim. These claims are also allowable for their own
24 recited features which, in combination with those recited in claim 1, are neither
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1 shown nor suggested by the cited references, either singly or in combination with
2 one another.

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4 **Claims 10-14**

5 As amended, **claim 10** recites an apparatus comprising [amendatory
6 language appears in bold italics]:

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- a first integrated circuit including a plurality of differential drivers;
 - a first connector coupled to the first integrated circuit;
 - a second connector coupled to the first connector through a plurality of electrical conductors, wherein alternating pairs of the electrical conductors are reversed such that at least one pair of conductors is reversed at a ***crossover*** position ***located substantially*** closer to the first connector than the second connector; and
 - a second integrated circuit coupled to the second connector, wherein the second integrated circuit includes a plurality of differential receivers.

13 In making out the rejection of claim 10, the Office Action states that Kish's
14 crossover position must be at the mid-point between conductor pairs. Applicant
15 agrees. The Office Action then argues that "there are inherently plural of points
16 among plural of continuous points positioned from positions (30, 32) of a first
17 connector (10) to positions (52, 54) of a second connector (50) wherein said plural
18 of points are at positions closer to the first connector than the second connector."
19 Applicant amends the language of claim 10 in order to clarify that the ***crossover***
20 position is ***located substantially*** closer to the first connector than the second
21 connector. Accordingly, for at least this reason, claim 10 is allowable.

22 **Claims 11-14** depend from claim 10 and, as such, are allowable as
23 depending from an allowable base claim. These claims are also allowable for their
24 own recited features which, in combination with those recited in claim 10, are
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1 neither shown nor suggested by the cited references, either singly or in
2 combination with one another.

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4 **Claims 15-21**

5 As amended, **claim 15** recites an apparatus comprising [amendatory
6 language appears in bold italics]:

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- a printed circuit board;
 - a plurality of connectors disposed on the printed circuit board;
 - a first integrated circuit disposed on a first substrate, wherein the first substrate is configured to be coupled to one of the plurality of connectors;
 - a second integrated circuit disposed on a second substrate, wherein the second substrate is configured to be coupled to one of the plurality of connectors; and
 - a first plurality of electrical conductors coupled to the plurality of connectors, wherein alternating pairs of conductors between adjacent connectors are reversed such that at least one pair of conductors is reversed at a *crossover* position ***located substantially*** closer to one of the plurality of connectors than another of the plurality of connectors.

16 In making out the rejection of claim 15, the Office Action states that Kish's
17 crossover position must be at the mid-point between conductor pairs. Applicant
18 agrees. The Office Action then argues that "there are inherently plural of points
19 among plural of continuous points positioned from positions (30, 32) of a first
20 connector (10) to positions (52, 54) of a second connector (50) wherein said plural
21 of points are at positions closer to the first connector than the second connector."
22 Applicant amends the language of claim 15 in order to clarify that the *crossover*
23 position is ***located substantially*** closer to one of the plurality of connectors than

1 another of the plurality of connectors. Accordingly, for at least this reason, claim
2 15 is allowable.

3 **Claims 16-21** depend from claim 15 and, as such, are allowable as
4 depending from an allowable base claim. These claims are also allowable for their
5 own recited features which, in combination with those recited in claim 15, are
6 neither shown nor suggested by the cited references, either singly or in
7 combination with one another.

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9 **Claims 26-31**

10 As amended, **claim 26** recites a method comprising [amendatory language
11 appears in bold italics]:

- 12 • generating a plurality of differential signals;
13 • transmitting the plurality of differential signals through a first
14 connector and a second connector to a plurality of differential
receivers;
15 • reversing the polarity of alternating differential signals at a *crossover*
position *located substantially* closer to the first connector than the
second connector; and
16 • reversing the polarity of alternating differential signals between the
second connector and the plurality of differential receivers.

18 In making out the rejection of claim 26, the Office Action states that Kish's
19 crossover position must be at the mid-point between conductor pairs. Applicant
20 agrees. The Office Action then argues that "there are inherently plural of points
21 among plural of continuous points positioned from positions (30, 32) of a first
22 connector (10) to positions (52, 54) of a second connector (50) wherein said plural
23 of points are at positions closer to the first connector than the second connector."
24 Applicant amends the language of claim 26 in order to clarify that the *crossover*
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1 position is ***located substantially*** closer to the first connector than the second
2 connector. Accordingly, for at least this reason, claim 26 is allowable.

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4 **Claims 27-31** depend from claim 26 and, as such, are allowable as
5 depending from an allowable base claim. These claims are also allowable for their
6 own recited features which, in combination with those recited in claim 26, are
7 neither shown nor suggested by the cited references, either singly or in
8 combination with one another.

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10 **Claims 32 and 34-35**

11 As amended, **claim 32** recites a method comprising [relevant amendatory
12 language appears in bold italics]:

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- modifying a transmitter package such that the coupling coefficient of the transmitter package is substantially the same as the coupling coefficient of a receiver package;
 - transmitting multiple pairs of differential signals across a plurality of conductors using the transmitter package;
 - reversing polarity of alternating pairs of differential signal conductors such that at least one pair of conductors is reversed at a ***crossover*** position ***located substantially*** closer to the transmitter package than the receiver package; and
 - receiving the multiple pairs of differential signals using the receiver package.

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21 In making out the rejection of claim 32, the Office Action states that Kish's
22 crossover position must be at the mid-point between conductor pairs. Applicant
23 agrees. The Office Action then argues that "there are inherently plural of points
24 among plural of continuous points positioned from positions (30, 32) of a first
25 connector (10) to positions (52, 54) of a second connector (50) wherein said plural

1 of points are at positions closer to the first connector than the second connector.”
2 Applicant amends the language of claim 32 in order to clarify that the *crossover*
3 position is *located substantially* closer to the transmitter package than the receiver
4 package. Accordingly, for at least this reason, claim 32 is allowable.

5 **Claims 34-35** depend from claim 32 and, as such, are allowable as
6 depending from an allowable base claim. These claims are also allowable for their
7 own recited features which, in combination with those recited in claim 32, are
8 neither shown nor suggested by the cited references, either singly or in
9 combination with one another.

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11 **Conclusion**

12 All pending claims are in condition for allowance. Applicant respectfully
13 requests reconsideration and prompt issuance of the application. If any issues
14 remain that prevent issuance of this application, the Examiner is urged to contact
15 the undersigned attorney before issuing a subsequent Office Action.
16

17 Respectfully Submitted,

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19 Dated: 9-13-04

20 By:

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22 Steven R. Sponseller
23 Reg. No. 39,384
24 (509) 324-9256
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